4.11 PUBLIC SERVICES AND UTILITIES

This section describes the existing public services and utilities that serve SQSP and evaluates the project's potential effect on these services and facilities. As described in Chapter 4, where appropriate and relevant, the analysis in this section identifies the differences in impacts that would be anticipated to occur with implementation of the project under four conditions: budgeted inmate capacity, maximum design inmate capacity, single level design option, and stacked design option. In the case of public services and utilities, the number of inmates housed at the SQSP would result in varying demands for certain services including water supplies and wastewater conveyance and treatment capacity. However, for other services (i.e., solid waste, schools, police, fire, gas, and electricity) the number of inmates would not change substantially how these services are provided to the CIC. Further, the single level and stacked design option would have no bearing on this issue and is not considered in this analysis.

4.11.1 POLICE SERVICES

SQSP and the surrounding area are served by the Marin County Sheriff's Department (Sheriff). The Kentfield Substation, one of three sub-stations that provide general law enforcement services in the unincorporated communities of Marin County, provides law enforcement services to SQSP. The Kentfield Substation is located approximately 4.7 miles west of the project site and employs 2 sworn deputies and one parking enforcement staff person. When a situation arises that requires a heightened response level, aid from adjacent substations is provided. The non-emergency response time from the Kentfield Substation to the project site is approximately 7 minutes, with a maximum response time of 20 minutes. The emergency response time is approximately 7 minutes, with a maximum response time of 10 minutes (Augustus, pers. comm., 2004a).

The Twin Cities Police Department provides law enforcement services to the cities of Larkspur and Corte Madera. The Twin Cities Police Department's service area borders the service boundary of the Sheriff and the two share responsibility for traffic management along Sir Francis Drake Boulevard.

Land uses surrounding the project site consist primarily of open space and residential uses. Criminal activity is reported to be low, with approximately 60 calls occurring over a 12-month period in 2003 (Augustus, pers. comm., 2004a). Crowd control is sometimes required when large crowds congregate in San Quentin Village near the east gate usually when execution of an inmate is planned to occur. CDC and the Sheriff's Department have entered into a mutual aid agreement to provide adequate response during these and other events. Under this agreement, the Sheriff's Department provides deputies for crowd control and CDC reimburses the Sheriff's Department for expenses incurred. Typically, protests require less than 30 officers and rarely last more than 8 hours (Augustus, pers. comm., 2004b).

THRESHOLDS OF SIGNIFICANCE

The project would have a significant impact on law enforcement services if it would:

- result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times or other performance objectives for law enforcement.

Effects on Law Enforcement

CDC would continue to provide its own onsite security personnel (i.e., correctional officers), and CDC's existing mutual aid agreement with the Sheriff's Department would continue with implementation of the

project. It is anticipated that the number of service calls from SQSP would not substantially increase with the project because the use on the site would not change. Further, response times to the project site would not increase because no offsite improvements are proposed that would interfere with local roadway systems and the project would not substantially increase traffic volumes along local roadways (see Section 4.12, Transportation and Circulation). Staff of the Sheriff's Department have indicated that no new deputies, substations, or other facilities would be required to serve the project and that the project would not interfere with their ability to continue to provide law enforcement services in the community (Augustus, per. comm., 2004a).

Because the Sheriff's Department anticipates that existing staff levels would be adequate to serve the project without substantially affecting their ability to provide services elsewhere, and response times to the project site would not increase, the project would have a less-than-significant impact on law enforcement services (Impact 4.11-a).

Proposed Mitigation Measures

Less-Than-Significant Impacts

The following impact was identified as less than significant, and therefore no mitigation is required:

4.11-a: Effects on Law Enforcement

4.11.2 FIRE PROTECTION SERVICES

SQSP provides its own onsite fire protection services. The SQSP fire station is located on prison grounds, approximately 300 yards east of the project site, near the warehouse buildings. The station employs a total of 20 field and administrative personnel (i.e., 1 fire chief, 4 fire captains, and 15 inmate firefighters). During weekdays, 1 fire chief, 1 fire captain, and 15 inmate firefighters are on-duty. During evenings and weekends, the fire captain and firefighters are on-duty. Equipment at the station includes 3 fire engines, 1 rescue truck, and 1 half-ton pick-up. The fire station responded to approximately 670 calls at SQSP in 2003, mostly for emergency medical response. Engine response time to the project site is approximately 2 minutes. Currently, the fire station does not have any mutual aid agreements with other local fire agencies (McNitt, pers. comm., 2004).

THRESHOLDS OF SIGNIFICANCE

The project would result in a significant impact to fire services if the project would:

- result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times or other performance objectives for fire protection.

Effects on Fire Protection Services

The project would result in the construction of new buildings on the project site that would require fire protection services in the event of a fire emergency. The CIC includes the construction of a fire safety system including alarms, extinguishers, and sprinklers to automatically respond in the event of a fire emergency. Based on conversations with CDC staff, no new fire personnel or equipment would be required to serve the CIC (McNitt, pers. comm., 2004). Although the project includes the construction of a new perimeter electrified fence system, response times to the project site would not substantially increase because access would be provided via a vehicle sallyport.

Because the project would not substantially affect the SQSP Fire Station's ability to provide fire protection services at SQSP, and emergency response times would not substantially increase, the project would have a less-than-significant impact on fire protection services (Impact 4.11-b).

Proposed Mitigation Measures

Less-Than-Significant Impacts

The following impact was identified as less than significant, and therefore no mitigation is required:

4.11-b: Effects on Fire Protection Services

4.11.3 SCHOOLS

High housing costs and low availability in Marin County has resulted in the wide distribution of prison employees and their families throughout adjacent and outlying communities. Based on the current distribution of prison employees in the region (see Section 4.10, Employment, Population, and Housing), it is anticipated that the majority (i.e., 68%) of new CIC staff and their families would reside in Solano, Contra Costa, Marin, and Sonoma counties.

Recent statistics (2002-2003) were gathered from school districts in Solano, Contra Costa, Marin and Sonoma County. In general, schools in these counties are currently operating at or over capacity, which is a familiar condition experienced throughout most of the State (Education Data Partnership 2004).

THRESHOLDS OF SIGNIFICANCE

The project would have a significant impact on schools if it would:

- substantially increase school enrollment in any district that is near or over capacity and, as a result, cause the need to physically alter school facilities, the construction of which could cause significant environmental impacts.

Impacts on Schools

The proposed CIC under maximum bed capacity (i.e., 1,408 beds) would result in the employment of 648 new employees at the project site. Similar to existing conditions, these employees and their school-age children are expected to be widely dispersed throughout the region with a majority (i.e., 440 employees) residing in Solano, Contra Costa, Marin, and Sonoma counties. A statewide survey of CDC employees indicates that the average number of school children per CDC employee is 0.79 (CDC 1995). Therefore, the project would result in the generation of approximately 512 new students. The CDC survey also separates student generation rates for elementary and high schools as follows: 0.60 K-8 students (0.45 elementary, 0.15 middle school) and 0.19 high school students per CDC family. Based on these student generation rates, the project would generate 231 elementary, 77 middle school, and 98 high school students. These students would be primarily distributed among school districts in Solano, Contra Costa, Marin, and Sonoma counties. Because of their wide distribution, it is not anticipated that the project would substantially increase enrollment in any one school district such that it would result in the need for additional facilities (i.e., classrooms) or schools. Further, in districts that are over capacity, new housing construction in these communities would pay school mitigation fees. These fees, by definition of the legislature, would fully mitigate project impacts.

Because CIC employees would be widely distributed throughout the region, it is anticipated that the project would not substantially increase school enrollment in any one school district such that it would require the construction of new facilities (i.e., classrooms) or schools. Further, if employment-related housing affected a capacity constrained school district, it is likely that school mitigation fees would be collected in association with the housing. This would be a less-than-significant school impact (Impact 4.11-c)

Proposed Mitigation Measures

Less-than-Significant Impacts

The following impacts were identified as less-than-significant, and therefore no mitigation is needed:

4.11-c: School Impacts

4.11.4 WASTEWATER TREATMENT AND DISPOSAL

The analysis provided in this section is based on Technical Memorandum No. 2, Water and Wastewater Projections and Capacity Assessment, prepared by West Yost & Associates in July 2004 and the Predesign Engineering Report for the San Quentin Condemned Inmate Complex prepared by Winzler & Kelly in July 2004. A copy of the West-Yost memo is include in Appendix F. The Predesign Engineering Report is available for review at CDC, 501 J Street, Room 304, Sacramento, California 95814.

REGIONAL WASTEWATER CONVEYANCE AND TREATMENT FACILITIES

The Central Marin Sanitation Agency (CMSA) is responsible for wastewater treatment services for SQSP and the surrounding vicinity. Areas currently served by CMSA include Sanitary District No. 1 (consisting of Ross Valley, Larkspur, and SQSP), Corte Madera Sanitation District, and San Rafael Sanitation District. Wastewater generated at SQSP is transported through several large diameter force main pipelines to a regional wastewater treatment plant (WWTP) located less than one mile north of the project site (Exhibit 4.4-1).

The CMSA WWTP treats wastewater received at the plant to a secondary level (i.e., mechanical and biological treatment), and has a treatment capacity of 10 million gallons per day (mgd) in dry weather and up to 30 mgd in wet weather. Currently the WWTP treats an average of approximately 8 mgd and SQSP currently generates approximately 0.72 mgd of wastewater that is conveyed to the WWTP.

SQSP WASTEWATER COLLECTION FACILITIES

Wastewater from SQSP is collected through a network of gravity sewers and small pump stations which convey wastewater to a larger onsite pump station (herinafter referred to as the SQSP pump station), located on SQSP just east of the project site. Wastewater from San Quentin Village is also pumped to the SQSP pump station. SQSP operates one side (i.e., the wet side) of the pump station, including the wet well, and Ross Valley Sanitary District (RVSD) maintains and operates the other side (i.e., the dry side) of the pump station, including the wastewater pumps. The pump station has three constant-speed, 30 horsepower (HP), non-clog centrifugal pumps each rated at 1,200 gallons per minute (gpm) (two duty and one standby). The wastewater pump station is equipped with pre-treatment facilities consisting of grinders that shred large-debris in the wastewater stream so that all particles are carried freely, under normal flow conditions, through the sanitary sewer system.

From the onsite pump station, the combined (i.e., SQSP and San Quentin Village) wastewater flow is pumped through the 18-inch-diameter San Quentin force main pipeline operated and maintained by RVSD. This 18-inch main pipeline connects to the 54-inch-diameter Ross Valley force main pipeline located approximately 0.5 miles west of the site along Sir Francis Drake Boulevard. The 54-inch force main is maintained by CMSA and conveys the wastewater to the regional WWTP. The CMSA discharges its treated wastewater in San Francisco Bay.

EXISTING SQSP WASTEWATER FLOWS

The average dry weather flow (ADWF) of wastewater from SQSP is approximately 0.72 mgd with maximum day flows of 1.5 mgd (West Yost 2004). The unit wastewater flow per inmate for this time period averaged 118 gallons per inmate per day (gpid)(West Yost 2004).

EXISTING SQSP WASTEWATER LOADINGS

Wastewater quality can be described in terms of its five-day biochemical oxygen demand (BOD) and the total suspended solids (TSS) present in the wastewater stream. BOD is typically described as the oxygen needed by microorganisms to degrade organic material in the wastewater. TSS is a measure of the solids that usually can settle out of the water. Based on data collected from November 1994 to March 2000, BOD loading at SQSP averaged 0.48 pounds per day per inmate (lb/d/i) and the TSS loading averaged 0.46 lb/d/i (West & Yost 2004). However, these loadings have been declining over the years with average BOD and TSS loadings in1999 of 0.33 lb/d/i and 0.30 lb/d/i respectively. Based on the number inmates at SQSP and the average wastewater loadings, the SQSP is estimated to generate 1,463 pounds of sewage sludge (i.e., byproduct of the wastewater treatment process) per day at the CMSA WWTP once the wastewater has undergone treatment. CMSA currently disposes the sludge it produces at the Redwood Sanitary Landfill.

REGULATORY BACKGROUND

San Francisco Regional Water Quality Control Board

If not properly treated, wastewater can reduce the quality of receiving waters (i.e., surface waters and groundwater aquifers). In California, the nine Regional Water Quality Control Boards (RWQCBs), under the supervision of the State Water Resources Control Board (SWRCB), are responsible for protecting surface, ground, and coastal waters throughout the state. SQSP is in the jurisdiction of the San Francisco RWQCB. The RWQCB develops standards (limits) restricting the concentration and loading of pollutants that can be discharged into a water body, and enforces these standards by requiring authorization before discharges of potential water-borne pollutants. Authorization for projects involving wastewater discharge is referred to as Waste Discharge Requirements (WDRs) and includes standards for pollutant levels in the discharge.

Central Marin Sanitation District

CMSA's discharge to San Francisco Bay is monitored and regulated by the San Francisco RWQCB through issuance of a National Pollution Discharge Elimination System (NPDES) permit. The NPDES permit outlines monitoring and reporting requirements for the CMSA's discharge. CMSA regulates commercial, industrial, and institutional discharges to the wastewater collection system. CMSA regulates SQSP through wastewater discharge Permit S001-10, which outlines effluent limitations (pollutants and maximum allowable concentrations), monitoring requirements, reporting requirements, general conditions, and noncompliance penalties for wastewater that is conveyed to the CMSA.

THRESHOLDS OF SIGNIFICANCE

The project would have a significant impact on the existing wastewater collection, treatment and disposal system if it would:

- result in a demand for wastewater treatment service that is substantial in relation to the remaining WWTP capacity or if the demand exceeds the capacity;
- require or result in the construction or expansion of new wastewater treatment facilities, the construction of which could cause significant environmental effects; or
- not meet wastewater treatment requirements of the San Francisco RWQCB.

Impacts to Existing Wastewater Services and Facilities

Wastewater generated at the CIC is estimated based on a unit wastewater generation rate of 150 gpid. This unit is based on the historical wastewater flow from new state prisons and approved design values for other CDC facilities. This wastewater generation rate includes flow from staff, inmates, visitors, onsite housing, and support facilities. CDC intends to maintain budgeted inmate population levels at SQSP with implementation of the project (see Section 3). If this condition were to occur, the project would not result in an increase in wastewater flows generated at SQSP. Instead, new conveyance facilities would be constructed to convey wastewater from the CIC to SQSP's existing pump station. However, demand for inmate beds could increase throughout the statewide prison system such that the maximum design capacity of the CIC could be used. Under this condition, the maximum population of approximately 7,380 inmates would increase the bed capacity at SQSP by 1,158 beds. The additional inmates from this project would result in the generation of an additional 211,000 gallons per day (gpd) of wastewater (i.e., 0.21 mgd) under average dry weather flow (ADWF) conditions and 422,000 gpd (i.e., 0.42 mgd) under maximum day conditions (Table 4.11-1) (MDDWF). At maximum design capacity (i.e., 7,380 inmates), SQSP (with CIC flows) would generate a total of approximately 1.1 mgd ADWF and 2.2 mgd MDDWF.

Table 4.11-1
Expected Wastewater Flows from the Condemned Inmate Complex

Wastewater Flow	Amount
Average Dry Weather Flow [1]	0.21 mgd
Maximum Day Flow [2]	0.42 mgd

[1] Based on 150 gpid.
[2] Peaking factors: Maximum day (2.0)
Source: Winzler & Kelly

Each of the 3 existing pumps at the SQSP wastewater pump station has an individual pumping capacity of 1.73 mgd. Assuming that two identical pumps operate in parallel, and the third pump is used as standby, the pump station has a total capacity of 3.46 mgd. The project's projected maximum design wastewater flows in combination with existing SQSP flows would not exceed the maximum design capacity of the SQSP pump station. Based on the preliminary design analysis, the existing pump station would have sufficient capacity to accommodate project-related wastewater flows. However, because the existing pump station facilities are aged (i.e., greater than 20 years old), some equipment would be upgraded with implementation of the project; however, these upgrades would not expand the capacity of this facility (Winzler & Kelly 2004).

The existing SQSP 18-inch force main pipeline would be able to adequately accommodate project-related wastewater flows at maximum design capacity of the CIC. However, a portion of the existing pipeline

would need to be relocated to allow project construction. A new section of 18-inch force main would be installed around the perimeter of the CIC beneath the perimeter road (Exhibits 4.11-1a and 4.11-1b). Staff of RVSD has indicated that their conveyance facilities have adequate capacity to serve the project (West Yost 2004).

The CMSA WWTP is rated to handle 10 mgd flows in dry weather conditions and currently receives approximately 8 mgd of wastewater. The project under maximum design capacity would increase flows at the CMSA WWTP by 0.17 mgd ADWF (i.e., 1,158 inmates at 150 gpid), which is well within CMSA's existing available capacity. This increased demand for wastewater treatment is not substantial in relation to remaining capacity, and staff of CMSA have indicated that the WWTP would be able to accommodate project-related wastewater flows (West Yost 2004).

Stormwater inflow to the wastewater facilities would be minimal because existing stormwater facilities would capture stormwater at SQSP and the project would include construction of a new stormwater drainage system on the project site. Project-related stormwater would be collected and conveyed to the existing outfall along the shoreline of San Francisco Bay (Section 4.8, Hydrology and Water Quality).

The project-related wastewater flows would not exceed existing available conveyance capacity of the SQSP pump station and the existing force main pipelines. Further, the CMSA WWTP has ample available capacity to treat project-related wastewater flows. Therefore, the project would have a less-than-significant impact on wastewater facilities (Impact 4.11-d).

Effects on Sludge Generation

The quantity of sludge generated at the CMSA WWTP as a result of project-related wastewater flows is dependent on the number of inmates housed at SQSP, the BOD and TSS concentrations in the wastewater stream, and the pre-treatment (i.e., grinding) of wastewater at SQSP before conveyance to the CMSA WWTP. CDC intends to maintain budgeted inmate population levels at SQSP with implementation of the project. If this were to occur, the project would not result in an increase in wastewater loadings to the CMSA WWTP because the total inmate capacity of SQSP would be unchanged from existing conditions, the characteristics (i.e., BOD and TSS concentrations) would not substantially change, and pre-treatment of the wastewater would occur. However, at the maximum design capacity sludge generation would increase.

Based on historical wastewater loadings and approved design values at other CDC facilities, the recommended average annual wastewater loadings for the project are 0.36 lb/d/i for BOD and 0.36 lb/d/i for TSS. Based on these design values, the project is anticipated to generate 417 pounds per day (lb/d) of BOD and 417 lb/d of TSS (West Yost 2004).

Under normal loading conditions at the CMSA WWTP, it is estimated that each inmate results in the generation of approximately 0.25 pounds of sludge per day. Under maximum bed capacity at the CIC, the project would generate approximately 290 pounds of sludge at the CMSA WWTP on a daily basis. Staff of CMSA and the Redwood Landfill (the disposal site of CMSA sludge) has indicated that their facilities have sufficient capacity to accommodate the additional solids generated by project.

Because the CMSA WWTP and the Redwood Landfill would have adequate capacity available to handle the increase in sludge generated by the project, this would be a less-than-significant impact (Impact 4.11-e).

Consistency with Wastewater Treatment Requirements

Similar to existing operations at the SQSP, project-related wastewater flows and loads would be required to meet existing regulatory requirements. The flow and loading characteristics of SQSP wastewater is regulated by CMSA under Permit S001-10. This permit authorizes SQSP to discharge industrial wastewater into the sanitary sewer system.. The permit provides effluent limitations for pollutants in the wastewater stream in addition to general discharge prohibitions (such as prohibition of heated discharges or discharge with a pH less than 6.0 or greater than or equal to 12.5). As required by Permit S001-10, CMSA conducts monitoring at SQSP to confirm whether the prison is within the adopted permit limitations. These monitoring efforts are conducted on a quarterly basis.

The water quality of the CMSA discharge is regulated and monitored by the San Francisco RWQCB through an adopted NPDES permit. The CMSA's NPDES permit establishes effluent limitations, monitoring requirements, and reporting requirements for wastewater discharged to San Francisco Bay.

SQSP would continue to comply with existing regulatory and permit requirements of the CMSA and RWQCB with implementation of the project. Further, the projected increase in wastewater flows and loadings would not substantially change the characteristics of the wastewater conveyed to CMSA such that it would cause the SQSP to exceed existing permit limitations.

Because SQSP would continue to take all measures to comply with existing monitoring requirements of CMSA and the RWQCB, and the project would not substantially change the characteristics of the wastewater conveyed to the CMSA, the project would have a less-than-significant-impact on wastewater quality (Impact 4.11-f).

Proposed Mitigation Measures

Less-than-Significant Impacts

The following impacts were identified as less than significant, and therefore no mitigation measures are necessary:

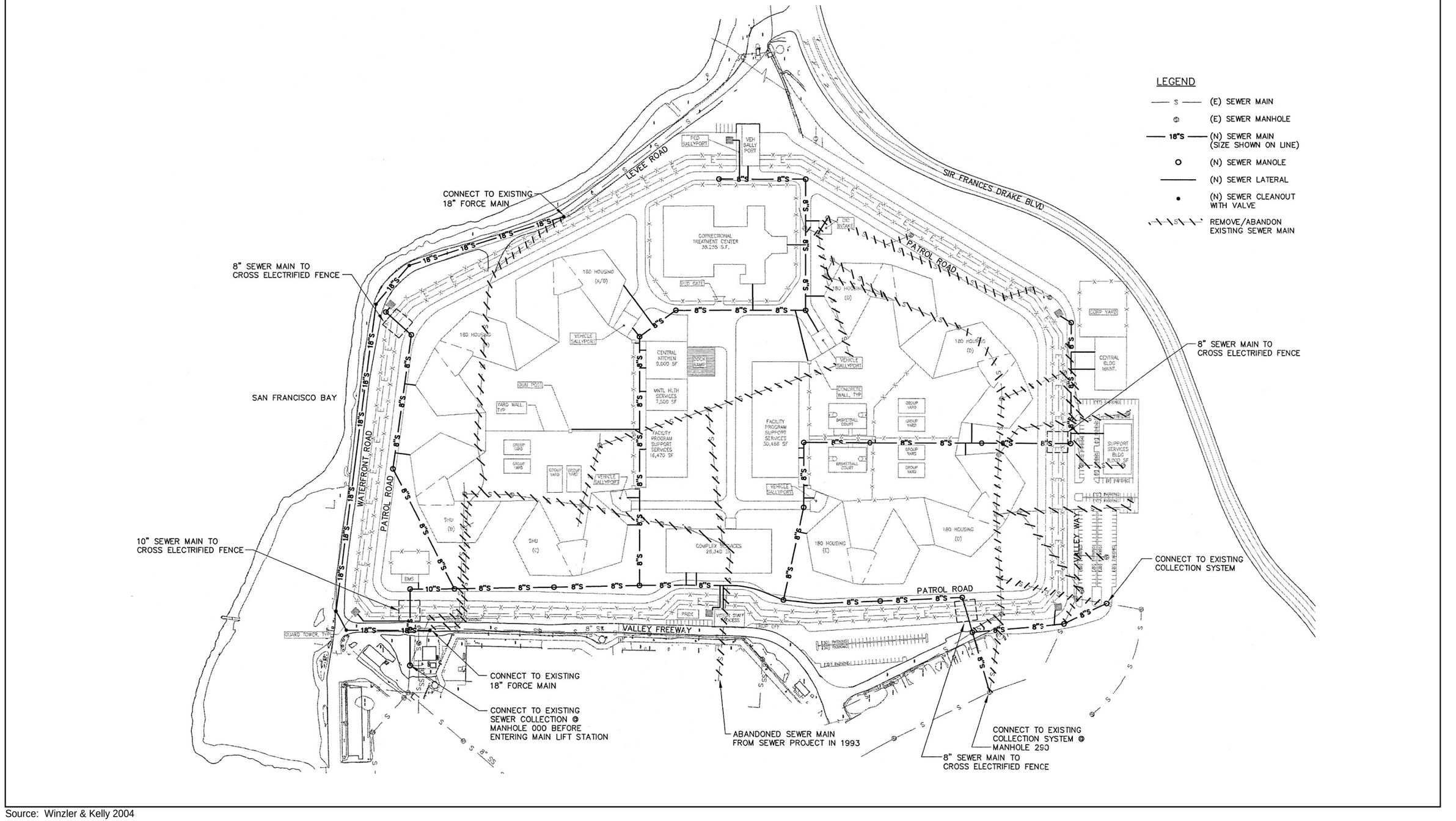
4.11.4-d: Impacts to Existing Wastewater Supplies and Facilities
4.11.4-e: Effects on Sludge Generation
4.11.4-f: Consistency with Wastewater Treatment Requirements

4.11.5 WATER SUPPLY

The analysis provided in this section is based on consultation with the Marin Municipal Water District (MMWD), research, the *Technical Memorandum No. 2, Water and Wastewater Projections and Capacity Assessment* (Appendix F), prepared by West Yost & Associates in July 2004 and the *Predesign Engineering Report for the San Quentin Condemned Inmate Complex* prepared by Winzler & Kelly in July 2004.

REGIONAL WATER SUPPLY FACILITIES

MMWD provides potable water to approximately 185,000 people in a 147 square mile area of Marin County, including SQSP. The maximum water demands in MMWD's service area are approximately 32,000 acre feet per year (AFY). The operational yield of MMWD's existing system is 29,000 AFY (West Yost 2004), which means that MMWD is currently operating under a 3,000 AFY supply shortfall under maximum water demand conditions. MMWD defines operational yield as the yield that would limit 25% water rationing to once every 50 years, and 10% water rationing to once every ten years. The



Source: Winzler & Kelly 2004

Proposed Wastewater Collection Facilities ñ Single Level Design Option

EXHIBIT 4.11-1a

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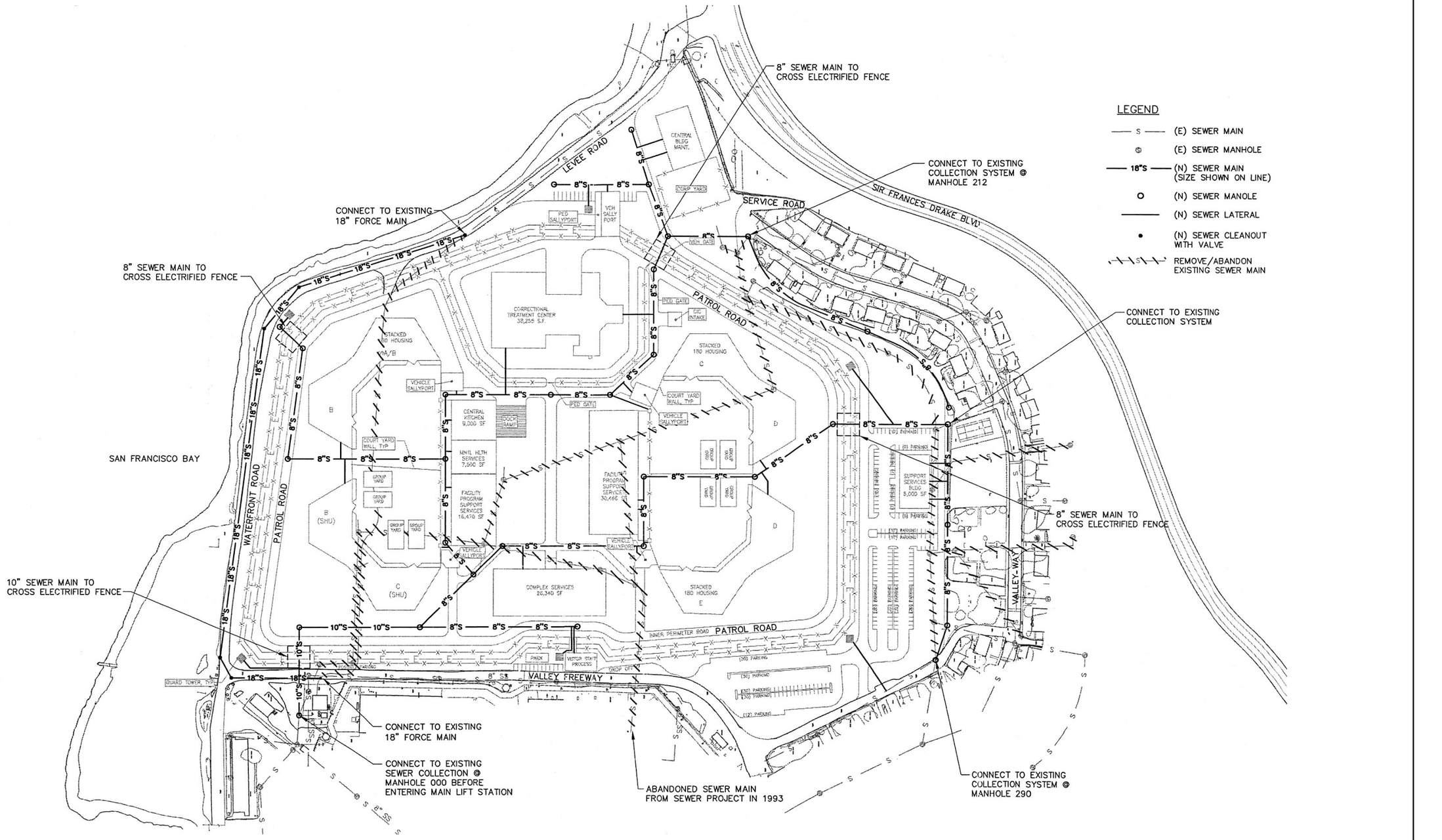

Source: Winzler & Kelly 2004

Proposed Wastewater Collection Facilities ñ Stacked Design Option

EXHIBIT 4.11-1b

San Quentin State Prison Condemned Inmate Complex Project Draft EIR
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current shortfall in water supplies means that MMWD must implement water rationing more frequently than would be necessary if they were supplying water at their operational yield. As a result, MMWD has implemented water conservation measures (i.e., low-flow showers and toilets) throughout its service area to decrease its water demands. The average water demands in MMWD's service area (with conservation measures in place) are approximately 28,600 AFY.

The primary water source for MMWD is rainfall captured on the western slopes of the coastal range in a watershed north of Mount Tamalpias. This water is stored in seven reservoirs. Five reservoirs are on Mount Tamalpias (Lagunitas, Phoenix, Alpine, Bon Tempe, and Kent) and two reservoirs are located in West Marin (Nicasio and Soulajule). MMWD's total reservoir storage capacity is approximately 80,000 acre-feet (af) (MMWD 2004a).

To supplement the reservoir supply, MMWD has an agreement with Sonoma County Water Agency (SCWA) for the delivery of up to 6,800 AFY of Russian River water. Under the agreement, MMWD is allowed to take a portion of the entitled water during the summer, if the supply and conveyance capacity are available. The Russian River water is conveyed to MMWD via the 30-inch-diameter North Marin Aqueduct, which is owned by the North Marin Water District (NMWD). MMWD and NMWD have an intertie agreement that allows the Russian River water to be conveyed through the NMWD's pipelines, as long as it does not adversely affect the availability of water to NMWD users (i.e., the demands of NMWD and MMWD together do not exceed the conveyance capacity of the aqueduct). The demand for Russian River water by SCWA and NMWD is expected to increase. If the demand does increase as expected, less would be available to NMWD, which translates to less water available to MMWD. This would exacerbate the operational yield deficit within the MMWD service area.

To further increase available water supplies, MMWD is preparing to construct a 15 mgd desalination plant that would provide approximately 10,000 AFY of new water supplies to serve MMWD's service area (MMWD 2003). The proposal involves diverting raw water from San Rafael Bay, pre-treating it to remove solid contaminants, and desalination through reverse osmosis (RO). This project is currently under environmental review by MMWD. An EIR on this project is expected to be completed in 2005. If it is approved by MMWD, construction would require financing through a variety of sources, some of which have not yet been identified.

Water Reclamation and Conservation

MMWD recycles up to 2 million gallons per day (mgd) of wastewater from the Las Gallinas Valley Sanitation District treatment plant. Wastewater conveyed to the Las Gallinas treatment plant undergoes tertiary treatment (i.e., filtered) before being conveyed to MMWD's recycled water treatment plant for additional treatment. The reclaimed water is then distributed via a separate pipeline system to more than 250 customers in northern San Rafael. The reclaimed water is used for irrigating public landscaping, parks, toilet flushing, car washes, air conditioning cooling towers, and commercial laundries (MMWD 2003).

MMWD encourages water conservation throughout Marin County through a variety of programs. MMWD has a tiered rate structure that penalizes excessive water use and a strict "water waster" ordinance to penalize water waste and encourage the use of water-saving fixtures and appliances. MMWD offers voluntary conservation programs such as rebates to businesses for installing water efficient dishwashers, toilets and clothes washers. MMWD's Landscape Ordinance 385, adopted by the Board of Directors on March 3, 1999, provides guidance for designing and installing landscapes and irrigation systems that conserve water. In April, 2002 the MMWD Board of Directors also strengthened the existing water waster ordinance (District Code 6.02) to target water users that have not corrected problems with their irrigation equipment, allowing MMWD to assess financial penalties. Despite a 10%

population increase, the average annual water demand in 2003 was less than the water demand in 1987 because of these types of water conservation programs (MMWD 2003).

REGIONAL GROUNDWATER SUPPLIES

The area surrounding SQSP consists of uplifted metamorphic rock with little groundwater storage capacity. There is only one small aquifer in the Ross Valley area consisting of young alluvium deposits. The relatively small size of the Ross Valley aquifer limits the available safe yield. Because of the number of existing water supply wells using this source, additional water supply from this source is not available.

There are no known aquifers in the immediate vicinity of SQSP. There have been reports of a small spring on the slope to the north of the main prison buildings. Given the limited recharge area available, the existing spring is probably supplied from a small perched aquifer that would not have sufficient safe yield to supply water for the project. Because CDC does not propose to use groundwater to serve the project, this issue is not addressed further in this Draft EIR.

EXISTING SQSP WATER SUPPLY AND USE

Existing Water Supply Facilities

Potable water is used at SQSP in inmate cells, kitchen facilities, onsite personnel housing, vocational programs, fire protection, and for minimal landscape irrigation. Laundry facilities were discontinued approximately one year ago, and instead, prison laundry is shipped to California State Prison, Solano.

SQSP receives its potable water supply from MMWD. A 16-inch pipeline conveys water along Sir Francis Drake Boulevard. This pipeline is reported to be in good condition up to its intersection with the prison west gate. However, as the pipeline heads east along Sir Francis Drake Boulevard toward I-580, it downsizes to a 12-inch diameter pipe that is reported to be in poor condition (Winzler & Kelly 2004). From this pipeline, the water is pumped via a booster pump station and conveyed to SQSP through two service meters located on the west side of I-580. The meters serve a 12-inch diameter water main that delivers potable water to a 3 million gallon concrete storage reservoir located on a hill in the northeast portion of SQSP property. The reservoir is separated into two 1.5 million gallon sections to allow half of the tank to be taken out of service for maintenance or repairs as needed. Potable water is delivered from the storage reservoir to SQSP facilities through 10- and 12-inch water distribution pipelines.

Historical Water Demand

CDC has a contracted water entitlement with MMWD of 861.2 AFY. Water demands at SQSP have steadily increased from 1997 through 2003, as shown in Table 4.11-2. Over the same period, the inmate population declined. SQSP inmates, staff, and employee residents have used, over this period, an average of approximately 140 gallons per inmate per day (gpid) or a total of 0.82 mgd, although average annual demand has ranged in each of the years from a low of 122 gpid to a high of 154 gpid. For the fiscal year 2002-2003 (July 2002 – June 2003), a total of approximately 300 million gallons, or 953 acre-feet, of water was used by SQSP (CDC 2003). This total exceeds SQSP's existing 861.2 AFY annual water entitlement from MMWD by over 91 AF (MMWD 2004b).

In response to higher than desired historic water demands, SQSP is in the process of installing automated flush valves on 2,600 existing toilets at the main prison facilities. These automated flush valves would be used to regulate the frequency of toilet flushes, reducing the number of flushes per day by approximately 50%. In addition, the flush valves would use only 1.9 gallons-per-flush compared to the current 3.5 gallons-per-flush valves that are currently in use at the prison. Based on preliminary estimates by

MMWD, if there is no decrease in the number of flushes, the water savings would be approximately 206 AFY. However, if the valves result in a reduction in the number of flushes per day per toilet by 50% (which is expected), the retrofit would conserve an additional 121 AFY. In total, the toilet retrofits would result in a water savings of approximately 327 AFY. This would reduce SQSP existing water demands to an estimated 626 AFY (953 AFY minus 327 AFY), which is below SQSP existing water entitlement from MMWD. SQSP has secured funding for the purchase of the automated flush valves and is in process of securing funding for the installation of the valves throughout the main prison facilities. There are no impediments to securing the needed funds. CDC is planning that the 2,600 toilets would be retrofitted by winter 2005, which is prior to completion of the project.

Table 4.11-2
SQSP Monthly and Annual Water Demand (gallons per inmate per day)

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1997	130	106	106	121	131	121	129	139	132	120	122	114	122
1998	117	130	105	123	126	125	133	136	131	131	131	133	127
1999	136	115	136	137	138	168	139	153	151	145	136	147	142
2000	145	133	126	148	142	147	149	151	148	132	144	128	141
2001	150	142	129	145	133	133	168	152	152	143	140	148	145
2002	137	139	128	146	152	146	155	154	166	145	139	148	146
2003	141	146	121	150	138	161	162	159	176	175	163	156	154
Average	137	130	122	139	137	143	148	149	151	142	139	139	140
Maximum	150	146	136	148	152	168	168	159	176	175	163	156	154
Minimum	117	106	105	121	126	121	129	136	131	120	122	114	122

Source: West Yost 2004

REGULATORY BACKGROUND

Marin Municipal Water District

MMWD's primary regulation of water supply to non-residential customers is through the water entitlement process. Water entitlement is defined as "the maximum amount of water the District is committed to supply any individual service on an annual basis" (District Code 11.08.180). Entitlements are either based on the historical water use for a site or the amount purchased through connection fees, which are based on calculations performed by MMWD's Engineering Department. The calculations take into consideration, the type of use onsite and the number of people onsite. Water entitlement from MMWD must be reviewed when a project is proposed. The entitlement review assesses the change in water use associated with the project and determines if the project proponent must purchase additional water entitlement from the district. The entitlement process ensures that the water use at a site corresponds with the water entitlement. If water use exceeds the entitlement, thereby exceeding the water budget and baseline, the water bill may be substantially increased.

In general, projects that result in an increase in water demand of 100 AFY or more would be considered by MMWD to have a potentially significant effect on existing available water supplies (McGuire, pers. comm., 2004).

THRESHOLDS OF SIGNIFICANCE

The project would have a significant impact on water supplies if it would:

- require or result in the construction of new water facilities or expansion of existing facilities, the construction of which would cause significant environmental effects; or

- not have sufficient water supplies available to serve the project from existing entitlements and resources and/or would require new or expanded entitlements.

Additionally, MMWD staff generally use an estimated 100 AFY of new demand as a threshold of significance.

Effects on Water Demand and Supply

If CDC maintains budgeted inmate population levels at SQSP with implementation of the project, and if retrofits are installed as planned, future demand would be less than the most recent water year and less than CDC's contracted entitlement.

Water demands at SQSP in 2003 averaged 154 gpid, which resulted in the demand for approximately 953 AFY of water from MMWD. This water demand exceeded SQSP's water entitlement (i.e., approximately 861 AFY) from MMWD by approximately 91 AF. The planned installation of automated flush valves on 2,600 prison toilets at existing SQSP would result in a water savings estimated by MMWD of 327 AFY. This savings would reduce SQSP water demands to a total of 626 AFY, which is below SQSP's existing entitlement from MMWD.

This EIR assumes that the water savings devices have already been installed at existing SQSP and that the existing water use is at the projected 626 AFY rather than the 953 AFY (see existing conditions discussion). The rationale for using this lower baseline is:

1. The retrofit program is planned, funded, and in the process of being implemented.

2. Retrofits installation is planned to be completed in the winter of 2005.

3. Planned water savings are based on estimates provided by MMWD. As the local purveyor with long-term experience and expertise in the effectiveness of water conservation devices, the planned water savings are considered to be a reliable estimate.

4. An alternative approach would be that CDC would assume the baseline is 953 AFY and that water conservation measures at existing SQSP would be installed as a mitigation measure for this project. If CDC were to use this alternative approach, overall water use (after mitigation) of the existing SQSP plus project would be less than the baseline conditions and the project would have no impact. Thus, the approach used herein, where the proposed project demand is added *after* installation of the existing SQSP conservation devices, is a worst-case analysis. CDC does not take "credit" for reduction of existing water use at SQSP as part of the project.

Recommended Statewide CDC planning criteria would result in a design for the CIC water supply system to handle average water demands of 175 gpid, which is higher than historical (pre-construction device installation) maximum water demands of 154 gpid. This design does not include the same kind of toilets being retrofitted at SQSP. Rather, the design is based on prisons CDC has constructed over the past decade in other parts of California. Under budgeted design capacity, the project would maintain existing

population levels at SQSP but, relocate up to 1,408 inmates to the CIC from the main prison facilities. Although the number of inmates would not change, the typical CDC prison demand would increase overall water demand for the 1,408 inmates under budgeted conditions (i.e., from 154 gpid to 175 gpid). Therefore, implementation of the project under budgeted conditions (i.e., 5,763 inmates) would increase water demands at SQSP. It is estimated that water demands for CIC inmates would be approximately 76 AFY (based on 175 gpid for the 1,408 inmates) greater than existing conditions. This would result in a total water demand at SQSP of approximately 702 AFY, which is below SQSP's existing water entitlement from MMWD and would not exceed MMWD's threshold for significant water supply impacts (i.e., 100 AFY). Further, actual water use under this condition may be less because of the installation of newer distribution facilities.

Under the maximum design capacity condition (i.e., an increase over existing conditions of 1,158 beds, see Chapter 3), the project's future water demands were estimated based on CDC design factors for new prisons, or an average unit water demand of 175 gpid multiplied by the additional number of inmates that would be housed at SQSP. As shown in Table 4.11-3, the project would increase the average daily water demand by 0.2 mgd over existing SQSP water use (0.82 mgd) or 227 AFY (West Yost 2004). It should be noted that under the single level design option 57 existing prison employee residences would be removed. Although removal of these homes would reduce water demands at SQSP, this reduction would not substantially affect overall projected demands. Therefore this reduction in water use is not considered further in this analysis. Total water demand would be 853 AFY (626 AFY existing plus 227 AFY for the project). This would be within SQSP's existing entitlement of 861.2 AFY, but would exceed MMWD's 100 AFY threshold of significance.

As with many water users, the rate of water use at SQSP is not consistent throughout the day. Rather, water use is subject to peak flows that correspond to concentrated use associated with water-intensive activities such as showering and landscape irrigation. A peaking factor of 2.0 was used to calculate maximum-day water demand. Using the average water demand unit of 175 gpid and a peaking factor of 2.0, the maximum day unit for water demand was determined to be 350 gpid. To determine the project's maximum water demands, this unit was multiplied by the increased capacity, 1,158. As shown in Table 4.11-3, the project would increase the maximum daily water demand by 0.4 mgd (West Yost 2004).

Table 4.11-3
Projected Water Demands for the Condemned Inmate Complex

Average Day Demand	= (1,408 inmates) x (175 gpid/inmate)	0.2 mgd
Max Month Peaking Factor		1.5
Max Month Demand	= (0.2 gpm) x (1.5)	0.3 mgd
Max Day Peaking Factor		2
Max Day Demand	= (0.2 gpd) x (2)	0.4 mgd
Annual Demand	= (average day x 365 days)	74 mgd
Source: West Yost 2004		

The average and maximum day water demands would need to be met by MMWD. The peak fire flow demands would be met by water stored in the existing 3 million gallon water storage tank at SQSP.

The MMWD Urban Water Management Plan projected that water demands in the district would increase to 36,000 AFY over the next 20 years. These projections were based on population estimates from the Association of Bay Area Governments (ABAG) and likely did not include this project. Further, these projections exceed MMWD's existing, available, approved supplies by approximately 7,000 AFY. Staff of MMWD has indicated that they would be able to serve the project under maximum design capacity conditions (McGuire, pers. comm., 2004). Although, the project's increased water demands under maximum design capacity (i.e., 227 AFY) would not be substantial in relation to MMWDs existing service area demands (i.e., 29,000 AFY), these demands would substantially increase existing water demands at SQSP, would exceed MMWD's threshold for significant water supply impacts (i.e., 100 AFY), and would further contribute to the exacerbation of MMWD's water supply shortfall.

At budgeted capacity the project is estimated to increase water demands by 76 AFY. Because this water demand would not exceed MMWD's threshold for significant water supply impacts (i.e., 100 AFY), this would be a less-than-significant impact. At maximum capacity the project would increase demand by 227 AFY. This would exceed MMWD water demand thresholds and would further contribute to MMWD's operational yield shortfall. This would be a significant impact (Impact 4.11-g).

Demand for New Water Supply Facilities

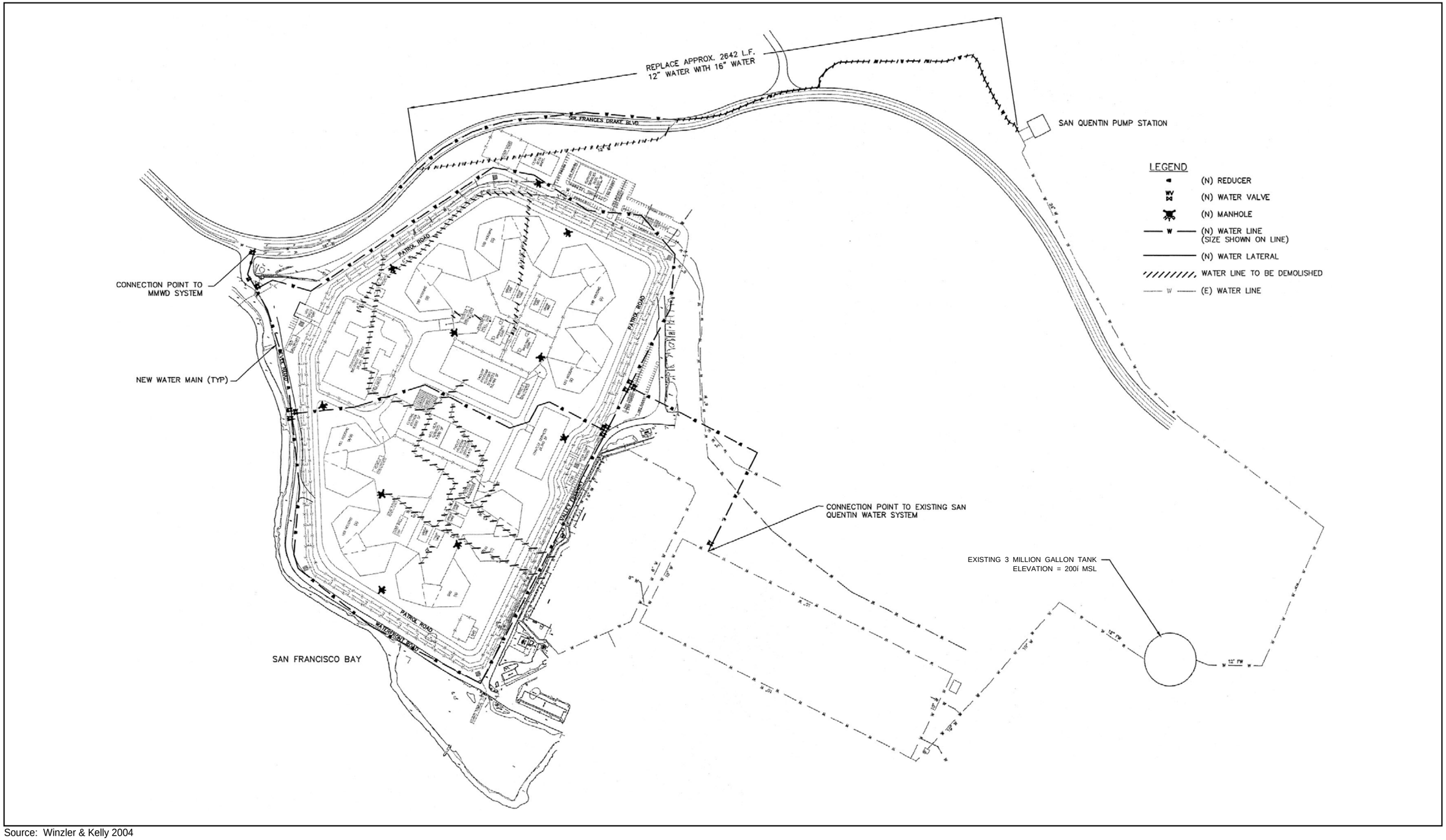
The project (under budgeted and maximum design conditions) would result in an increase in the demand for water from MMWD. This demand would further contribute to MMWD's operational yield shortfall (see Impact 4.11-g above). MMWD is proposing to construct a 15 mgd desalination plant along the shoreline of San Rafael Bay. This plant is expected to generate 10,000 AFY of new water supplies. MMWD is currently preparing a full-scope EIR for this project that would evaluate the environmental impacts for the following issues: visual, air quality, cultural, geology and soils, public services, population and housing, land use, hazardous materials, hydrology and water quality, biological and fishery resources, energy, and transportation and circulation. The extent of these impacts is not currently known and will not be known until MMWD completes its EIR, which is expected by sometime in 2005.

As part of the Draft EIR, potentially significant environmental effects will be identified and mitigation will be recommended to reduce these effects. Because the CIC project would increase the demand for water supplies, which would in turn contribute to MMWD's operational yield shortfall, the CIC project would contribute to MMWD's need to obtain new water supplies including the construction of the proposed desalination plant. The construction of the desalination plant could result in potentially significant environmental impacts in one or more of the resource areas indicated above.

Because the project could contribute to the need for MMWD to construct new water supply facilities, the construction of which could result in significant environmental impacts to several resources, the project's contribution to this impact would be potentially significant (Impact 4.11-h).

Effects on Water Supply Facilities

The project (under either design option) would receive water service from two connections: via MMWD's existing 16-inch water line, which runs along Sir Francis Drake Boulevard on the west side of the project site, and from the existing SQSP 12-inch pipeline located on the east side of the project site (Exhibits 4.11-2a and 4.11-2b). The existing 16-inch pipeline along Sir Francis Drake Boulevard is reported to be in good condition up to its intersection with the west gate. However, as the pipeline heads east along Sir



Source: Winzler & Kelly 2004

Water Supply Schematic Plan ñ Single Level Design Option

EXHIBIT 4.11-2a

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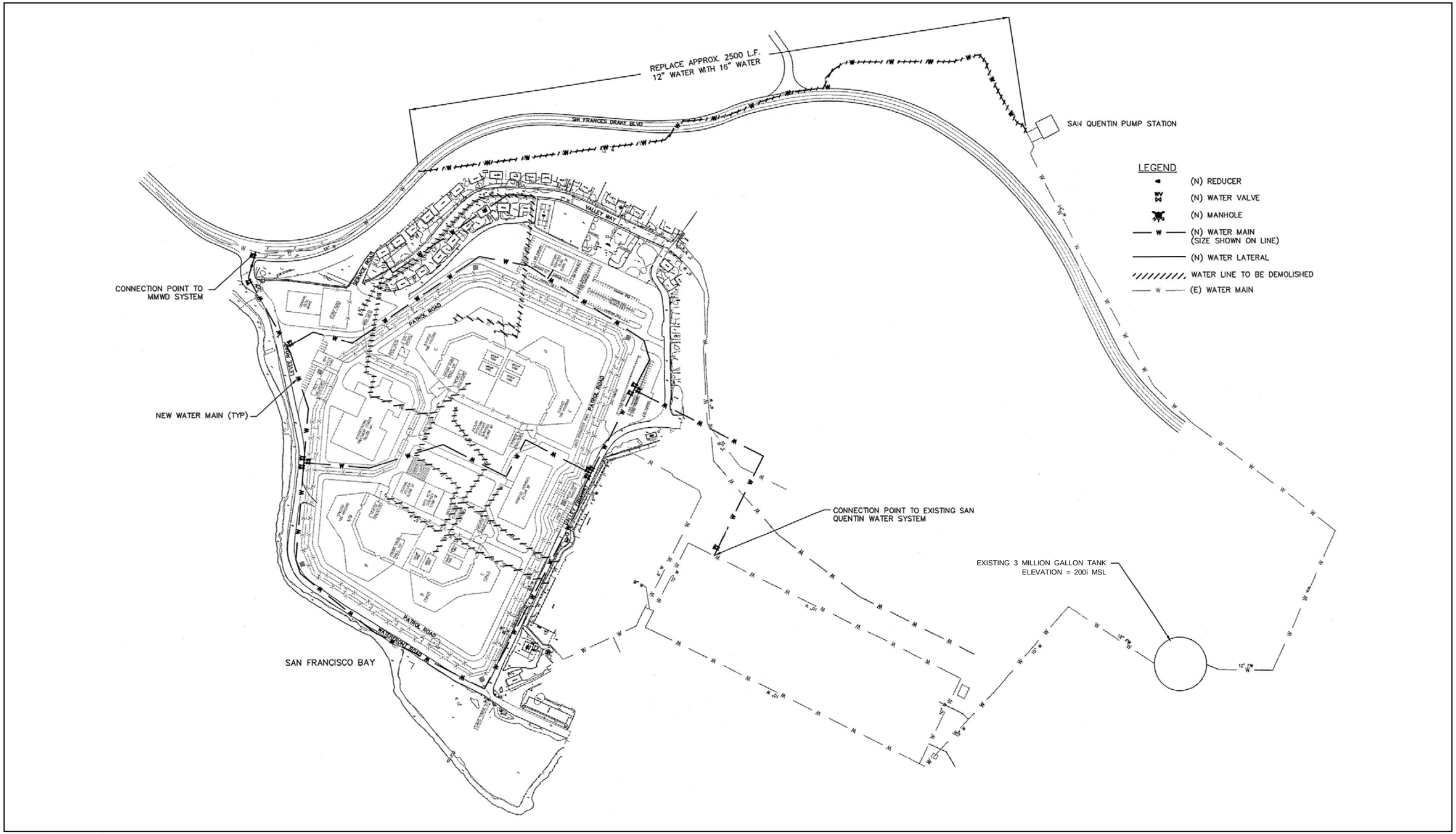

Source: Winzler & Kelly 2004

Water Supply Schematic Plan ñ Stacked Design Option

EXHIBIT 4.11-2b

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Francis Drake Boulevard toward I-580, it downsizes to a 12-inch diameter pipeline, which is reported to be in poor condition (Winzler & Kelly 2004).

Proposed improvements to existing water supply facilities would include:

- installation of new service to SQSP from the 16-inch Sir Francis Drake Boulevard water line near west gate; and

- upgrade the 12-inch diameter along Sir Francis Drake Boulevard from the end of the 16-inch diameter water line to the booster pump station (approximately 2,500 feet)**.**

The onsite water distribution system would consist of a main distribution loop of 12-inch pipe around the perimeter of the CIC and a 10-inch pipeline that divides the loop in half (Exhibits 4.11-3a and 4.11-3b). SQSP would continue to receive water from its existing connection near I-580. However, an additional connection to MMWD's water distribution system would be provided near west gate. This new connection point would provide additional reliability and redundancy in the water system and would likely provide higher and more reliable water pressure at the CIC. The project's water distribution facilities would be sized and designed in accordance with the applicable provisions of the California Water Works Standards (Title 22), the Uniform Fire Code (UFC), and National Fire Protection Association (NFPA) Standards.

The project, per an agreement with MMWD, would upgrade the existing 12-inch diameter water pipeline along Sir Francis Drake Boulevard to a 16-inch pipeline. The water line would remain in its existing alignment. The upgrade of these facilities would not adversely affect the provision of water to existing SQSP facilities. Also, the specific environmental effects (i.e., biology, cultural resources) of these pipeline improvements have been evaluated in the appropriate resources sections in Chapter 4 of this Draft EIR.

Because the proposed improvements to the existing water distribution system would not adversely affect the provision of water to existing SQSP facilities, and additional reliability and redundancy in the water supply system would be provided, this would be a less-than-significant impact (Impact 4.11-i).

Effects on Water Storage Facilities

SQSP currently uses, and would continue to use, water from the existing 3 million gallon storage tank to meet operational storage, fire storage, and reserve storage needs. Operational water demands at the SQSP occur when peak demand fluctuations exceed the supply capacity of the MMWD system. With implementation of the project, the SQSP's (entire site) operational demands would be approximately 0.8 million gallons.

The water storage tank provides water supplies to meet the largest single fire demand at SQSP, which is estimated to be 3,000 gpm for 4 hours. With implementation of the project, SQSP would require approximately 0.7 million gallons of fire water storage capacity. This storage capacity is in addition to operational storage capacity because a fire could occur during a maximum operational water demand day.

Reserve water storage is required at the SQSP in the event of an extended outage in MMWD's supply system. Although such an extended outage is considered highly unlikely, the project in combination with existing SQSP facilities would require approximately 0.6 million gallons of reserve water storage capacity, which would provide water supplies to SQSP facilities for several hours during maximum demand days.

With implementation of the project, SQSP would require a total of 2.1 million gallons of water storage capacity for operation, fire, and reserve uses. Because the existing water storage tank has a storage capacity of 3 million gallons, the existing storage facilities would be able to provide adequate water storage with implementation of the project. However, when half of the water storage tank (i.e., 1.5 million gallons) is taken offline for maintenance and repairs, there could be a shortage in water storage capacity to meet all storage needs (i.e., operational, fire, reserve). Historically, there has never been an event that would require use of all water storage capacity and the project would not be expected to result in an increase in the frequency of these events. Further, proposed second connection point to MMWD's existing water distribution system would provide greater reliability and redundancy in the overall water supply system at the SQSP.

The existing water storage tank would be able to provide adequate water storage for operational, fire, and reserve flows with implementation of the project. Further, the project would provide additional reliability and redundancy in the water supply system. Although water storage capacity would not be available to meet all water demands (i.e., operational, fire, and reserve) when half of the existing 3.0 million gallon water storage tank is taken offline, events that would require use of all available water storage capacity have never occurred at SQSP. Further, the project would not increase the potential frequency of these events. Therefore, the project would not adversely affect existing water storage facilities. This would be a less-than-significant impact (Impact 4.11-j).

Proposed Mitigation Measures

Less-than-Significant Impacts

The following impact was identified as less than significant, and therefore no mitigation is needed:

4.5.11-i: Effects on Water Supply Facilities
4.5.11-j: Effects on Water Storage Facilities

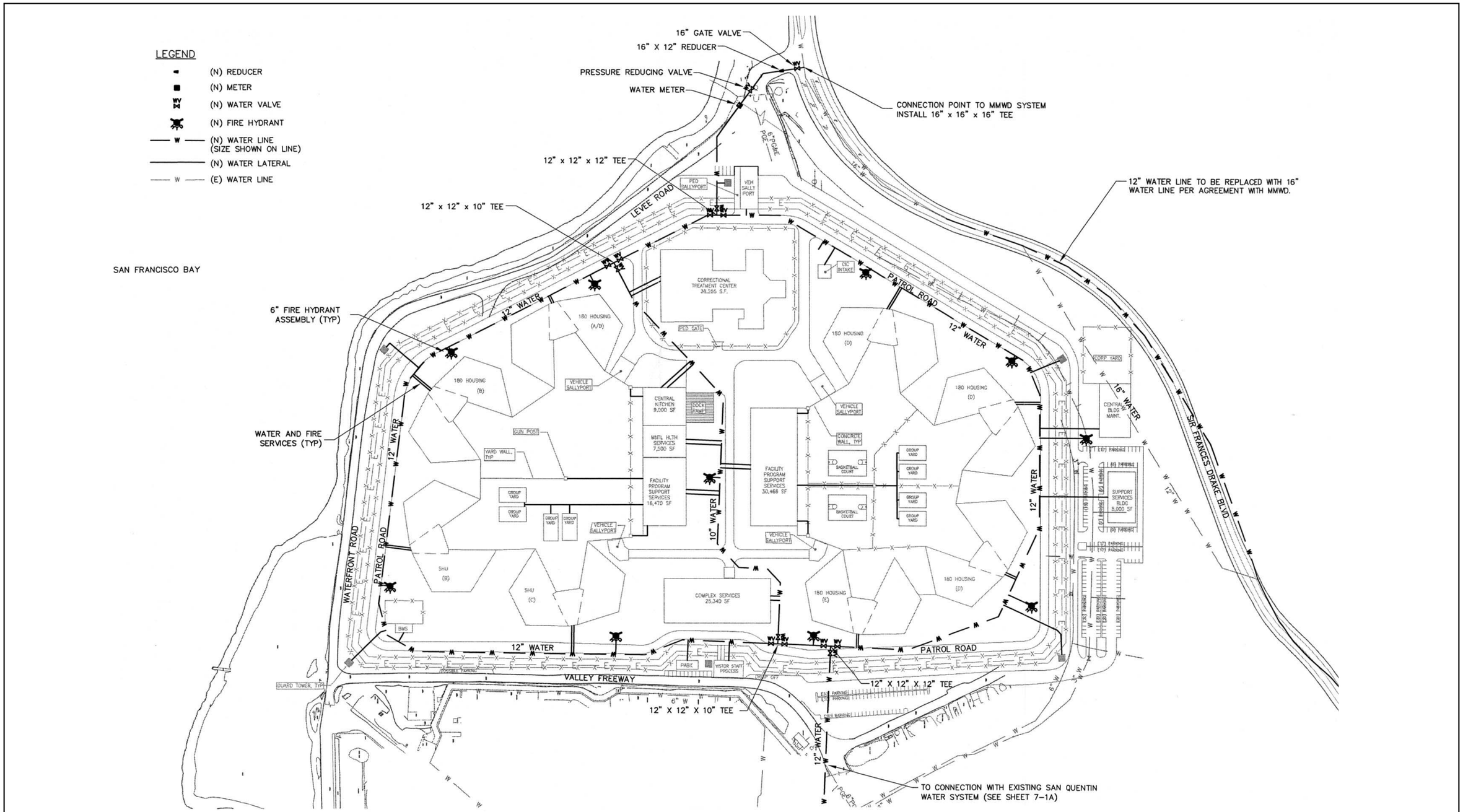
Significant and Unavoidable Impacts

The following impacts were identified as potentially significant.

4.11-g: Effects on Water Demand and Supply

Mitigation is available to substantially reduce this impact at CIC and is recommended below. Because water use would exceed MMWD thresholds of significance after mitigation, the impacts are significant and unavoidable.

- SQSP will reduce its overall demand for water by (1) restricting the total number of toilet flushes per day per inmate at the CIC and (2) decreasing the gallons-per-flush by using an automated flush valve. Automated flush valves will be installed on the 1,024 toilets in the cells at the CIC. These valves will be used to regulate the frequency of toilet flushes, reducing the potential number of flushes per day by approximately 50%. In addition, the flush valves will use only 1.9 gallons per flush. These improvements are estimated to result in a water savings of approximately 20–60 AFY. The project's water demands would be reduced to 167–207AFY, which is still above MMWD's water demand threshold.



Source: Winzler & Kelly 2004

Proposed Water Distribution Facilities ñ Single Level Design Option

EXHIBIT 4.11-3a

San Quentin State Prison Condemned Inmate Complex Project Draft EIR
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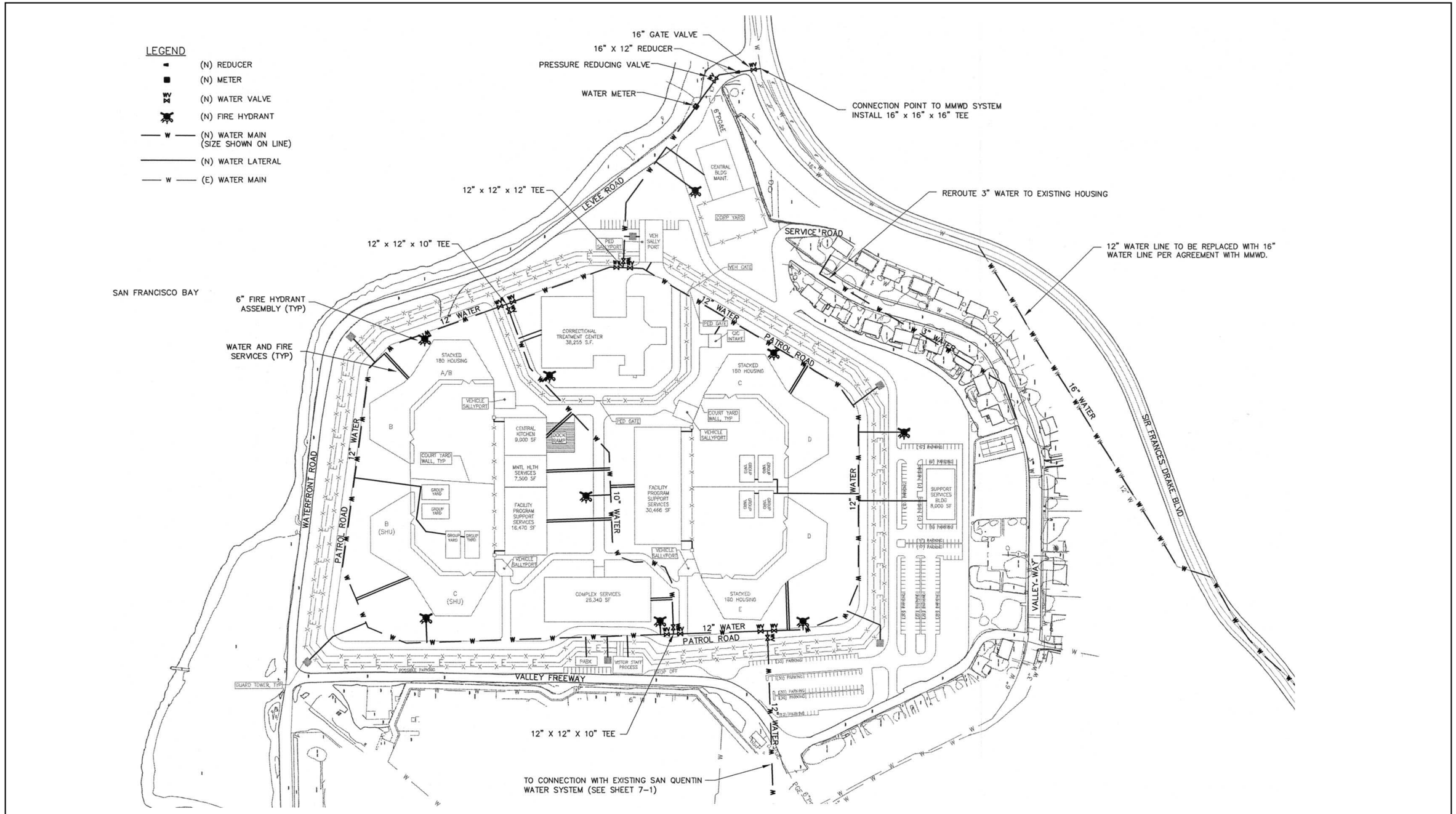

Source: Winzler & Kelly 2004

Proposed Water Distribution Facilities ñ Stacked Design Option

EXHIBIT 4.11-3b

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4.11-h: Demand for New Water Supply Facilities

- MMWD's potential construction of new water supply facilities would likely have significant effects on the environment. Mitigation for many of those impacts will be identified by MMWD during its environmental review process. The decisions regarding mitigation measures will be made by MMWD and affected regulatory agencies. If new water entitlements are required for CIC, CDC will be required to pay connection fees to MMWD. As one of many users of MMWD water, it is presumed that these connection fees, as well as monthly service fees, would translate to CDC's fair share contribution to MMWD's construction of new region-serving infrastructure, including mitigation.

The impacts of the proposed desalination plant have not been definitively determined, but clearly have the potential to be significant. Without additional information it can only be concluded that some impacts may be significant and unavoidable. If feasible mitigation which would be adopted by MMWD, is not effective in reducing impacts to a less-than-significant level, then the project's contribution to the need to construct the desalination plant would result in significant and unavoidable impacts.

4.11.6 SOLID WASTE

SQSP currently generates 395 tons of solid waste per month, which is collected by SQSP employees and transported to the Marin Resource Recovery Center (MRRC) (transfer station), located in San Rafael. The MRRC is operated by Marin County Sanitary Service. After approximately 240 tons of recycling materials including newspaper, cardboard, glass, and metals have been removed from the waste stream, approximately 155 tons of solid waste is hauled to the Redwood Sanitary Landfill for disposal. SQSP also disposes its wood furniture wastes (i.e., sawdust) from the onsite furniture factory at MRRC and the MRRC recycles the sawdust as an ingredient in compost.

The Redwood Sanitary Landfill, owned by Waste Management Inc., is located approximately 3.5 miles north of the City of Novato in Marin County. The landfill is approximately 420 acres in size and has a permitted disposal area of approximately 210 acres. The Redwood Sanitary Landfill is a permitted Class III solid waste facility, which can receive nonhazardous solid wastes and treated sewage sludge (Waste Management Inc. 2003). The maximum permitted capacity of the landfill is 19.1 million cubic yards and it can accept a maximum of 2,300 tons of solid waste per day. The Redwood Sanitary Landfill has a remaining capacity of approximately 12 million cubic yards (California Integrated Waste Management Board 2004a and 2004b).

SQSP currently runs a Recycling and Salvage Program (RASP). The RASP recovers used paper, cardboard, aluminum, burlap, egg crate material, and glass from SQSP operations to reduce the quantity of solid waste delivered to the Redwood Sanitary Landfill.

REGULATORY BACKGROUND

The California Waste Management Act of 1989 (AB 939) required state, county, and local governments to substantially decrease the volume of waste disposed at landfills by the year 2000. Marin County adopted a County Integrated Waste Management Plan, in compliance with AB 939 that included the Source Reduction and Recycling Element (Element). The Element (adopted in March 1992) outlined a course of action for meeting the state's mandate of diverting 50% of the waste stream from landfill disposal by the year 2000. Diversion may include source reduction, recycling, composting, and limited transformation, such as wood incineration. Marin County Sanitary Service is in compliance with AB939's 50% recycling requirement, because it currently recycles 65% of waste it collects.

THRESHOLDS OF SIGNIFICANCE

The project would have a significant impact on the environment if it would:

- not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or

- not comply with federal, state, and local statutes and regulations related to solid waste.

EFFECTS ON SOLID WASTE DISPOSAL FACILITIES

Implementation of the project would result in an increase in the municipal solid waste that is generated at the site. CDC estimates that new state prisons generate an average of 3.6 pounds of solid waste per inmate per day. This generation rate includes solid waste from prison employees, staff, and visitors. Although CDC intends to maintain existing inmate population levels (i.e., budgeted capacity) at SQSP, it is anticipated that solid waste generation rates would be slightly increased under this project condition because there would be a greater number of facilities and services at SQSP. However, this increase would not be substantial compared to existing solid waste generation rates.

Under maximum design capacity (i.e., increase of 1,158 beds) and with the stacked design option, the project would increase the solid waste generated at SQSP by 2.08 tons per day. Under the single level design option at maximum design capacity, the project would result in slightly reduced solid waste generation rates because this design option would remove 57 existing prison employee houses, which would no longer be contributing to solid waste generation at the site.

With implementation of the project, SQSP would continue the RASP program to reduce the volume of solid waste hauled off the site. The RASP is currently located on the project site and would be relocated either adjacent to the proposed location for the warehouse or at the old quarry site north of the project site. Continued implementation of the RASP under the project would reduce the gross tonnage of solid waste generated by approximately 40% (0.83 tons per day). Therefore, the net tonnage of solid waste generated by the project under the stacked design option at maximum design capacity would be approximately 1.25 tons per day and would be slightly reduced under the single level design option.

SQSP currently complies with CDC's goals for solid waste source reduction, substitution, and conservation. For example, SQSP does not use paper towels in the kitchen or health services areas, most food supplies (cleaning products and other supplies) are purchased in bulk quantities with minimum packaging materials, and SQSP does not use disposable utensils or serving containers. These operational practices would be implemented at the CIC.

The Redwood Landfill has available the capacity to handle the increase in solid waste generated by the project, which is projected to be less than 1% of current solid waste volumes currently accepted by the Redwood Sanitary Landfill. The project would not substantially affect landfill capacity, would not result in the construction of new solid waste disposal facilities, or impair waste management disposal services.

Because the project would not adversely affect landfill capacity, would not result in the construction of new solid waste disposal facilities, or impair waste management disposal services, this impact would be less than significant (4.11-k).

Proposed Mitigation Measures

Less-than-Significant Impacts

The following impacts were identified as less than significant, and therefore no mitigation measures are necessary:

4.11-k: Effects on Solid Waste Disposal Facilities

4.11.7 ELECTRICITY AND NATURAL GAS

The analysis provided in this section is based on the Predesign Engineering Report for the San Quentin Condemned Inmate Complex prepared by Winzler & Kelly in July 2004.

REGIONAL SETTING

Electricity and natural gas service in Marin County is provided by Pacific Gas and Electric Company (PG&E). PG&E provides electric and natural gas service to approximately 14 million people throughout a 70,000-square-mile service area in northern and central California. The service area stretches from Eureka in the north to Bakersfield in the south, and from the Pacific Ocean in the west to the Sierra Nevada in the east. PG&E's electrical power comes from a diverse mix of generating sources, including fossil-fueled plants, hydroelectric powerhouses, and a nuclear power plant. PG&E also buys power from independent power producers and other utilities. PG&E's natural gas service facilities include over 45,000 miles of natural gas pipelines that serve 4 million gas customer accounts. PG&E's gas piping system delivers natural gas from three major sources: Canada, Southwestern United States, and California (PG&E 2004).

LOCAL SETTING

Existing electrical facilities at SQSP include two overhead 15-kilovolt (kV) transmission lines, one from the San Rafael Substation and one from the Greenbrae Substation. Each 15-kV transmission line is capable of supporting SQSP's existing 2.6-megawatt load, with the second feeder as redundant back up. The transmission lines connect to an onsite substation located in the southeastern portion of SQSP. These facilities currently provide adequate service to SQSP. SQSP uses approximately 981,000 kilowatt hours (KWH) of electricity per month. For the fiscal year 2002-2003, SQSP used a total of approximately 11.8 million KWH of electricity (CDC 2003).

Natural gas at SQSP is purchased from PG&E. A 6-inch, 25 pounds per square inch (psi), natural gas distribution line serves SQSP. The distribution pipeline enters SQSP near west gate and runs east across the project site to the existing main meter house located approximately 0.75 miles inside the prison at the intersection of H Unit and Valley Road**.** The main meter house contains a PG&E-owned meter and SQSP-owned submeters. Gas distribution piping radiate from the main meter house to various points throughout SQSP. The existing natural gas facilities currently provide adequate service to SQSP. SQSP uses approximately 169,576 therms of natural gas per month and during the 2002-2003 fiscal year, total natural gas usage at SQSP was 2,035,000 therms (CDC 2003).

REGULATORY BACKGROUND

Title 24, Part 6 California's Energy Efficiency Standards for Residential and Nonresidential Buildings

The California Building Code Title 24, Part 6, establishes building energy efficiency standards for new construction (including requirements for new buildings, additions, alterations, nonresidential buildings, and repairs). Energy efficiency standards were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. New standards were adopted in 2001 as mandated by AB 970 to reduce California's electricity demand. The new standards went into effect on June 1, 2001. Currently the 2005 building energy efficiency standards are being developed in response to AB 970 (Statutes of 2000) and SB 5X (Statutes of 2001; outdoor lighting building standards). The updated standards were adopted by the California Energy Commission in November 2003 and will take effect on October 1, 2005 (California Energy Commission 2004).

THRESHOLDS OF SIGNIFICANCE

The project would have a significant impact on natural gas if it would:

- Result in an increase in demand for electricity or natural gas service that is substantial in relation to the existing demands; or
- Require or result in the construction of new electrical or gas facilities, the construction of which could cause significant environmental effects.

EFFECTS ON ELECTRICITY SUPPLIES

Although CDC intends to maintain existing population levels at SQSP, the construction of new buildings and the electrified fence would increase electrical demands at the SQSP regardless of the number of inmates that are housed at SQSP. However, the project's electrical demands would not substantially differ between budgeted or maximum design capacities or the single level or stacked design options.

The existing SQSP electrical load is 2.6 megawatts. The anticipated electrical load at the CIC has been conservatively estimated to be 5.1 megawatts, approximately double SQSP's existing electrical load. The project in combination with existing SQSP facilities would result in a total electrical load of approximately 7.7 megawatts (Winzler & Kelly 2004). Although this is a large increase in demand for electricity at the site, staff of PG&E have indicated that they would be able to serve the project and that the project would not adversely affect their ability to provide electricity to their service area (Winzler & Kelley 2004).

Standby electrical generators would be included in the project design. These generators would use diesel or other fuels and would be rated as required to provide emergency power to essential facilities including high-mast lights, security systems, and the electrified fence.

Although the project would increase demand for electricity, the project's demands would not exceed existing available electrical supplies and the project would not adversely affect PG&E's ability to provide electrical services to its existing customers. Therefore, the project would have a less-than-significant impact on electricity services (4.11-l).

EFFECTS ON NATURAL GAS SUPPLIES

Although CDC intends to maintain existing population levels (i.e., budgeted capacity) at SQSP, the construction of new buildings would increase natural gas demands at the SQSP regardless of the number of inmates housed at SQSP. However, the project's natural gas demands would not substantially differ between budgeted or maximum design capacities or the single level or stacked design options. Natural gas would be used at the CIC for cooking and other heating purposes.

The project's estimated demand for natural gas supplies is based on the number of beds and services such as kitchen facilities and laundry. The project's maximum peak fuel consumption is estimated to be approximately 2.6 million therms of natural gas per year (Winzler & Kelly 2004). This increase would more than double the existing yearly natural gas consumption at SQSP (approximately 2 million therms) resulting in a total demand of 4.6 million therms. Although this increase in demand would be large in relation to existing onsite demands, staff of PG&E have indicated that with the implementation of facility upgrades (discussed below), adequate supplies are available to serve the project and the project would not adversely affect their ability to provide natural gas service within the area (Winzler & Kelly 2004).

Although the project would increase demand for natural gas supplies at the site, the project's demand would not exceed existing available supplies. Further, staff of PG&E have indicated that they would be able to serve the project. Therefore, the project would have a less-than-significant impact on natural gas services (Impact 4.11-m).

EFFECTS ON ELECTRICAL FACILITIES

The existing PG&E electrical facilities serving SQSP consist of two overhead 15-kV transmission lines, which can each support a 2.6 megawatt load (total of 5.2 megawatts). Currently, one 15-kV transmission line provides the necessary electrical supplies at SQSP while the other provides redundant backup supplies. With implementation of the project, one 15-kV transmission line would not have adequate capacity to serve the proposed CIC load (5.1 megawatts) plus the existing SQSP load (2.6 megawatts). Use of both 15-kV transmission lines would be required to meet the SQSP's total anticipated electricity demand of 7.7 megawatts.

To provide reliable electric power to SQSP, PG&E may upgrade the two existing 15-kV transmission lines and ensure that power can be transmitted over both. The improvements to these two lines would be accomplished within the existing right-of-way and would use the existing power-pole structures. Staff of PG&E have indicated that they would be able to construct these improvements, and that these improvements would not affect their ability to provide electrical service at SQSP or to other existing customers. The upsizing of these facilities would not adversely affect the provision of electrical services at SQSP.

The existing PG&E transmission lines that serve the existing 15-kV substation (Substation 1) are located in the southeast portion of the prison. Electrical power is distributed from Substation 1 to SQSP buildings through 15-kV loop-feeder circuits for normal and emergency power. To provide power to the new CIC, a new 15-kV substation (Substation 2) would be constructed at the eastern boundary of the project site, just outside of the CIC visitor and staff entrance. The new substation would receive electricity from the Substation 1 by two 15-kV rated transmission line and would be distributed via underground 15-kV loop-feeder circuits for normal and emergency power, similar to the existing SQSP system. On loss of normal electrical power, the standby generators would automatically power-up to provide emergency power.

Although the project would require upgrades to existing PG&E transmission lines and a new substation onsite, PG&E has indicated that they can complete the necessary improvements and that these

improvements would not affect their ability to serve SQSP or their existing customers. Therefore, this would be a less-than-significant impact (Impact 4.11-n).

EFFECTS ON NATURAL GAS FACILITIES

Staff of PG&E has indicated that the existing 6-inch, 25 psi, natural gas distribution line serving SQSP would have adequate capacity to serve existing SQSP facilities and the proposed CIC. Therefore, the project would not require the expansion of any natural gas facilities.

The project would require the relocation of a portion of the existing PG&E 6-inch 25 psi natural gas supply main that is located directly under the CIC site. The existing PG&E main meter would require upsizing to handle the project's increased natural gas demands. The relocation and upsizing of these facilities would not adversely affect the provision of natural gas services at SQSP.

Because the project would not adversely affect the provision of natural gas services at SQSP, and staff of PG&E have indicated that capacity is available in their existing gas distribution line, this would be a less-than-significant impact (Impact 4.11-o).

Proposed Mitigation Measures

Less-than-Significant Impacts

The following impacts were identified as less than significant, and therefore no mitigation is needed:

4.11-l: Effects on Electricity Supplies
4.11-m: Effects on Natural Gas Supplies
4.11-n: Effects on Electrical Facilities
4.11-o: Effects on Natural Gas Facilities